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# Botanical Survey Report
# Steven Early
# Cannabis Cultivation Project

Prepared by

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8/23/23

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**Signature:** Caitlyn Allchin **Date: 8/23/23**

# Setting

The Steven Early Cannabis Cultivation Project (APN: 217-251-003-000) (Figures 1-4 , Pg 29-32) is located in Section 9, Township 2 South, Range 5 East, HB&M; Humboldt County, Black Lassic USGS 7.5' quadrangle. The project area is approximately 2.45 air miles northeast of the town of Blocksburg. The Cooper Creek runs through the property from east to west. The biogeographic region can be described using a three-tiered hierarchy of province, region, and sub-region. This site lies within the California Floristic Province, Northwestern California region, and Outer North Coast Ranges District (NCoRO) sub-region. The property is currently designated as Agricultural Grazing (AG) under Humboldt County General Plan. The ownership has gentle to moderate west facing slopes and ranges in elevation from 2080-2950 ft, or 634-900 m. The project area sits relatively flat at about 2320 ft elevation. The geology consists of marine sedimentary and metasedimentary rocks composed of sandstone with smaller amounts of shale, chert, limestone, conglomerate, and Franciscan mélange. The property is a mosaic of habitat types, including open pasturelands, oak woodlands composed of California black oak (*Quercus kelloggii*) and Oregon white oak (*Quercus garryana*), as well as mixed coniferous forest with a Douglas fir (*Pseudotsuga menziesii*) - madrone (*Arbutus menziesii*) Forest & Woodland Alliance (G4 S4) with California bay laurel (*Umbellularia californica*). The project area is in an open meadow, surrounded by oaks and mixed conifer forest. The Steven Early Cannabis Cultivation Project area has 43,560 sq ft of space dedicated to outdoor cultivation activities spread across 2 acres, and the property is approximately 127 acres in size.

# Methods

The botanical surveys for the Steven Early Cannabis Cultivation Project area were conducted by Caitlyn Allchin on 24 April 2023, 8 June 2023, and 10 July 2023. Caitlyn holds a B.S. in Botany from Cal Poly Humboldt, where she is currently a biology graduate student. Caitlyn has taken relevant courses including plant taxonomy, lichens and bryophytes, biology of fleshy fungi, introductory soils, introductory geology, and principles of ecology, and conducted her senior directed study on the pollination biology of Western coltsfoot (*Petasites frigidus* var*. palmatus)* in Arcata, CA. She has 5 years of botany experience in Northern California.

The survey was floristic in nature and seasonally appropriate. For the 2023 field season, approximately 2.5 field hours were spent conducting field surveys, with a survey rate of 2 acres/hour. Surveys included systematic assessment of all potential habitats in the area based on maps, aerial photos, and visible environmental features such as canopy cover, slope, soil texture, aspect, hydrologic features, and associated vegetation. This survey protocol is based on the Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018). A list of potential threatened, endangered, rare, or limited distribution plants on CNPS lists 1 - 4 found within the 9 – quad area as listed in CNPS Rare Plant Inventory and CDFW BIOS is available in Attachment A. Attachment B contains limited distribution plant and habitat photos. Attachment C lists all plants identified from botanical

surveys. Attachment D contains rare plant rank definitions. Attachment E contains multiple maps for reference, including a general location map, a CALVEG map, and a botanical survey map showing routes taken along with locations of limited distribution rare plants. Attachment F contains a soil map of the property.

## Project Description

The Steven Early Cannabis Cultivation Project has 43,560 sq ft of space dedicated to outdoor cultivation activities spread across 2 acres located on the western edge of the parcel boundary. Cooper Creek runs east-west through the property.

## Results

The Steven Early Cannabis Cultivation Project contains a small population of the limited distribution Tracy's tarweed, (*Hemizonia congesta ssp. tracyi*, CRPR 4.3) (Photos 1-2, Pg 16-17). This limited distribution plant occurs abundantly in the adjacent grasslands, and therefore the population will likely not be negatively impacted by cultivation activities.

Grasslands surrounding the proposed cultivation footprint contain a California oatgrass (*Danthonia californica*) - Idaho fescue (*Festuca idahoensis*) Herbaceous Alliance grassland (S3, GNR). Natural communities with a state ranking of S3 or lower are considered to be sensitive in the state of California. This Sensitive Natural Community (SNC) should not be impacted by cultivation activities since it is in the surrounding habitat to the cultivation footprint. The area to be cultivated is composed of annual and perennial grasses and forbs that are not homogenous to the adjacent grasslands.

The property is predominantly open pasturelands being actively grazed with minor components of mixed coniferous forest consisting of a Douglas fir (*Pseudotsuga menziesii*) - madrone (*Arbutus menziesii*) Forest & Woodland Alliance (G4 S4) with California bay laurel (*Umbellularia californica*), Oregon white oak (*Quercus garryana*), and California black oak (*Quercus kelloggii*) surrounding the area to be cultivated (Photos 3-4, Pg 18-19).

All potential rare plant habitats were surveyed, and false negative surveys are unlikely.

# Impacts

Cannabis cultivation activities may impact native plant species occurring within the cultivation footprint through soil compaction, fertilizer runoff, an increase in non-native species, competition, pathogens, or a change in soil pH.

# Mitigations

The limited distribution Tracy's tarweed, (*Hemizonia congesta ssp. tracyi*, CRPR 4.3) is abundant in the landscape in the adjacent grasslands and will therefore be minimally impacted by the cannabis cultivation activities. The eastern boundary of the proposed cultivation footprint should be avoided during cultivation activities to minimize impact on the limited distribution plants adjacent to the cultivation area.

The California oatgrass (*Danthonia californica*) - Idaho fescue (*Festuca idahoensis*) Herbaceous Alliance grassland Sensitive Natural Community will not be impacted due to their location outside of the proposed cultivation areas. Alternate locations for cultivation should be adequately assessed by a professional botanist during a seasonally appropriate time if the footprint is to be adjusted.

To reduce the spread of non-native and invasive species, it is recommended that the tires of trucks and equipment are washed before entering the property and after use on the property to minimize transport of invasive non-native species into and off the property. It is recommended that the perimeter of the project area is monitored during and after harvest activities take place for at least 5 years to minimize the spread of the invasive species on the parcel.

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# Attachment A. Potentially Occurring Sensitive Plant Species

**Rare Plant Table**

| # | Species | Status | | | | | Blooming Period | Family and Lifeform | Habitat and Elevation | Potential for Occurrence |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Federal | State | CRPR | Global Rank | State Rank | | | | |
| *1* | *Allium hoffmanii*<br>Beegum onion | -- | -- | 4.3 | G4 | S4 | Jun-Jul | Alliaceae<br>perennial<br>bulbiferous herb | Lower montane coniferous forest (serpentinite). 1100 – 1800 m | **No Potential**.<br>No habitat above 900 meters; no potential habitat exists. |
| *2* | *Anisocarpus scabridus*<br>Scabrid alpine tarplant | -- | -- | 1B.3 | G3 | S3 | Jul-Aug(Sep) | Asteraceae<br>perennial herb | Upper montane coniferous forest (metamorphic, rocky). 1650 – 2300 m | **No Potential**.<br>No habitat above 900 meters; no potential habitat exists. |
| *3* | *Arctostaphylos hispidula*<br>Howell's manzanita | -- | -- | 4.2 | G4 | S3 | Mar-Apr | Ericaceae<br>perennial<br>evergreen shrub | Chaparral (sandstone, serpentinite). 120 – 1250 m | **No Potential**.<br>No chaparral. No potential habitat exists. |
| *4* | *Arctostaphylos manzanita ssp. elegans*<br>Konocti manzanita | -- | -- | 1B.3 | G5 T3 | S3 | (Jan)Mar-May(Jul) | Ericaceae<br>Perennial<br>evergreen shrub | Chaparral, Cismontane woodland, Lower montane coniferous forest; volcanic. 395 – 1615 m | **Potential**.<br>Potential habitat exists within Lower montane coniferous forest areas surrounding the project area. |
| *5* | *Arnica spathulata*<br>Klamath arnica | -- | -- | 4.3 | G3 ? | S3 | May-Aug | Asteraceae<br>perennial<br>rhizomatous herb | Lower montane coniferous forest (serpentinite). 640 – 1800 m | **Potential**.<br>Although serpentine parent bedrock material is not mapped within this area, serpentinite may be present, therefore suitable habitat may exist within the forested habitat surrounding the cultivation footprint. |

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| *6* | *Astragalus rattanii var. rattanii* Rattan's milk-vetch | -- | -- | 4.3 | G4 T4 | S4 | Apr-Jul | Fabaceae perennial herb | Chaparral, Cismontane woodland, Lower montane coniferous forest; Gravelly, Streambanks. 30 – 825 m | **Potential**. Potential habitat exists within the forested habitat surrounding the project areas. |
| *7* | *Brasenia schreberi* Watershield | -- | -- | 2B.3 | G5 | S3 | Jun-Sep | Cabombaceae perennial rhizomatous herb (aquatic) | Marshes and swamps (freshwater). 0 – 2200 m | **No Potential**. No Marshes and swamps (freshwater) habitat. No potential habitat exists. |
| *8* | *Calycadenia micrantha* Small-flowered calycadenia | -- | -- | 1B.2 | G2 | S2 | Jun-Sep | Asteraceae annual herb | Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland; sparsely vegetated areas; Roadsides, Rocky, Scree, Serpentinite (sometimes), Talus. 5 – 1500 m | **Potential**. Potential habitat exists within sparsely vegetated areas; Roadsides, Rocky, Scree, and Talus areas within the project areas. |
| *9* | *Carex praticola* Northern meadow sedge | -- | -- | 2B.2 | G5 | S2 | May-Jul | Cyperaceae perennial herb | Meadows and seeps (mesic). 0 – 3200 m | **Potential**. Potential habitat exists within the meadow of the cultivation footprint. |
| *10* | *Carex scabriuscula* Siskiyou sedge | -- | -- | 4.3 | G3 G4 | S4 | May-Jul | Cyperaceae perennial rhizomatous herb | Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Mesic, Seeps (sometimes), Serpentinite (sometimes). 710 – 2345 m | **Potential**. Potential habitat exists within the meadow of the cultivation footprint as well as the forested habitat surrounding the project areas. |
| *11* | *Claytonia serpenticola* Serpentine spring beauty | -- | -- | 4.3 | G3 | S3 | Apr-Jun(Jul) | Montiaceae perennial herb | Subalpine coniferous forest, Upper montane coniferous forest; Openings (usually), Rocky, Serpentinite (usually). 1000 – 2450 m | **No Potential**. No habitat above 900 meters. No potential habitat exists. |
| *12* | *Collomia tracyi* Tracy's collomia | -- | -- | 4.3 | G4 | S4 | Jun-Jul | Polemoniaceae annual herb | Broadleaved upland forest, Lower montane coniferous forest; Rocky, Serpentinite (sometimes). 300 – 2100 m | **Potential**. Potential habitat exists within rocky areas as well as the forested habitat surrounding the project areas. |

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| *13* | *Coptis laciniata*<br>Oregon goldthread | -- | -- | 4.2 | G4<br>? | S3<br>? | (Feb)Mar-May(Sep-Nov) | Ranunculaceae perennial rhizomatous herb | Meadows and seeps, North Coast coniferous forest (streambanks); Mesic. 0 – 1000 m | **Potential**.<br>Potential habitat exists within meadows and the adjacent riparian corridor on the property. |
| *14* | *Cypripedium fasciculatum*<br>Clustered lady's-slipper | -- | -- | 4.2 | G4 | S4 | Mar-Aug | Orchidaceae perennial rhizomatous herb | Lower montane coniferous forest, North Coast coniferous forest; Seeps (usually), Serpentinite (usually), Streambanks. 100 – 2435 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the cultivation footprint and streambank areas adjacent to the project area. |
| *15* | *Cypripedium montanum*<br>Mountain lady's-slipper | -- | -- | 4.2 | G4<br>G5 | S4 | Mar-Aug | Orchidaceae perennial rhizomatous herb | Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest. 185 – 2225 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the cultivation footprint. |
| *16* | *Doellingeria glabrata*<br>Siskiyou aster | -- | -- | 4.3 | G4 | S3 | Jun-Sep | Asteraceae perennial herb | Lower montane coniferous forest, Upper montane coniferous forest; Openings, Rocky. 120 – 2705 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the cultivation footprint. |
| *17* | *Epilobium septentrionale*<br>Humboldt County fuchsia | -- | -- | 4.3 | G4 | S4 | Jul-Sep | Onagraceae perennial herb | Broadleaved upland forest, North Coast coniferous forest; Rocky (sometimes), Sandy (sometimes). 45 – 1800 m | **Potential**.<br>Potential habitat exists within rocky areas as well as the forested habitat surrounding the project areas. |
| *18* | *Erigeron maniopotamicus*<br>Mad River fleabane daisy | -- | -- | 1B.2 | G2<br>? | S2<br>? | May-Aug | Asteraceae perennial herb | Lower montane coniferous forest, Meadows and seeps (openings, dry). Disturbed areas, Openings, Roadsides, Rocky. 1275 – 1500 m | **No Potential**.<br>No habitat above 900 meters. No potential habitat exists. |
| *19* | *Erigeron robustior*<br>Robust daisy | -- | -- | 4.3 | G3 | S3 | Jun-Jul | Asteraceae perennial herb | Lower montane coniferous forest, Meadows and seeps; Serpentinite (sometimes). 200 – 610 m | **Potential**.<br>Potential habitat exists within the meadow of the cultivation footprint as well as the forested habitat surrounding the project areas. |

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| *20* | *Erythronium revolutum*<br>Coast fawn lily | -- | -- | 2B.2 | G4<br>G5 | S3 | Mar-Jul(Aug) | Liliaceae<br>perennial<br>bulbiferous herb | Bogs and fens, Broadleaved upland forest, North Coast coniferous forest; Mesic, Streambanks. 0 – 1600 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the cultivation footprint and streambank areas adjacent to the project area. |
| *21* | *Fritillaria glauca*<br>Siskiyou fritillaria | -- | -- | 4.2 | G3<br>G4 | S3 | (Apr-May)Jun-Jul | Liliaceae<br>perennial<br>bulbiferous herb | Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest; Serpentinite, Slopes, Talus. 1735 – 2440 m | **No Potential**.<br>No habitat above 900 meters; no potential habitat exists. |
| *22* | *Fritillaria purdyi*<br>Purdy's fritillary | -- | -- | 4.3 | G4 | S4 | Mar-Jun | Liliaceae<br>perennial<br>bulbiferous herb | Chaparral, Cismontane woodland, Lower montane coniferous forest; Serpentinite (usually). 175 – 2255 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the cultivation footprint. |
| *23* | *Gilia capitata ssp. pacifica*<br>Pacific gilia | -- | -- | 1B.2 | G5<br>T3 | S2 | Apr-Aug | Polemoniaceae<br>annual herb | Chaparral (openings), Coastal bluff scrub, Coastal prairie, Valley and foothill grassland. 5 – 1665 m | **Potential**.<br>Potential habitat exists within the grasslands. |
| *24* | *Hemizonia congesta ssp. tracyi*<br>Tracy's tarplant | -- | -- | 4.3 | G5<br>T4 | S4 | (Mar-Apr)May-Oct | Asteraceae<br>annual herb | Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest; Openings, Serpentinite (sometimes). 120 – 1200 m | **Potential**.<br>Potential habitat exists within the grasslands. |
| *25* | *Hosackia yollabolliensis*<br>Yolla Bolly Mtns. bird's-foot trefoil | -- | -- | 1B.2 | G2 | S2 | Jun-Aug | Fabaceae<br>perennial herb | Meadows and seeps, Upper montane coniferous forest (openings); dry barren exposed slopes; Dry, Gravelly (often), Slopes. 1645 – 2135 m | **Potential**.<br>Potential habitat exists within the meadow and any gravelly slope areas. |

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| *26* | *Howellia aquatilis*<br>Water howellia | FD | -- | 2B.2 | G3 | S2 | Jun | Campanulaceae annual herb (aquatic) | Marshes and swamps (freshwater). 1085 – 1290 m | **No Potential**.<br>No habitat above 900 meters, no marshes and swamps; no potential habitat exists. |
| *27* | *Iliamna latibracteata*<br>California globe mallow | -- | -- | 1B.2 | G2 G3 | S2 | Jun-Aug | Malvaceae perennial herb | Chaparral (montane), Lower montane coniferous forest, North Coast coniferous forest (mesic), Riparian scrub (streambanks); Burned areas (often). 60 – 2000 m | **Potential**.<br>Potential habitat exists within the adjacent forested habitat. |
| *28* | *Lathyrus biflorus*<br>Two-flowered pea | -- | -- | 1B.1 | G1 | S1 | Jun-Aug | Fabaceae perennial herb | Lower montane coniferous forest (serpentinite). 1370 – 1385 m | **Potential**.<br>Although no serpentinite parent bedrock material is documented in this habitat, ultramafic parent bedrock materials appeared to be present on the property. Therefore, potential habitat may exist within the adjacent forested habitat. |
| *29* | *Leptosiphon aureus*<br>Bristly leptosiphon | -- | -- | 4.2 | G4 ? | S4 ? | Apr-Jul | Polemoniaceae annual herb | Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland. 55 – 1500 m | **Potential**.<br>Potential habitat exists within the grasslands. |
| *30* | *Leptosiphon latisectus*<br>Broad-lobed leptosiphon | -- | -- | 4.3 | G4 | S4 | Apr-Jun | Polemoniaceae annual herb | Broadleaved upland forest, Cismontane woodland. 170 – 1500 m | **No Potential**.<br>No broadleaved upland forest, no cismontane woodland; no potential habitat exists. |
| *31* | *Lilium rubescens*<br>Redwood lily | -- | -- | 4.2 | G3 | S3 | (Mar)Apr-Aug(Sep) | Liliaceae perennial bulbiferous herb | Broadleaved upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Roadsides (sometimes), Serpentinite (sometimes). 30 – 1910 m | **Potential**.<br>Potential habitat exists within the forested habitat surrounding the proposed cultivation area as well as along roadsides. |

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| *32* | *Lilium washingtonianum ssp. purpurascens* Purple-flowered Washington lily | -- | -- | 4.3 | G4 T4 | S3 S4 | Jun-Aug | Liliaceae perennial bulbiferous herb | Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Serpentinite (often). 70 – 2750 m | **Potential**. Potential habitat exists within the adjacent forested habitat. |
| *33* | *Listera cordata* Heart-leaved twayblade | -- | -- | 4.2 | G5 | S4 | Feb-Jul | Orchidaceae perennial herb | Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest. 5 – 1370 m | **Potential**. Potential habitat exists within the adjacent forested habitat. |
| *34* | *Lupinus constancei* Lassics lupine | PE | CE | 1B.1 | G1 | S1 | Jul | Fabaceae perennial herb | Lower montane coniferous forest (serpentinite). 1500 – 2000 m | **No Potential**. No habitat above 900 meters; no potential habitat exists. |
| *35* | *Lupinus elmeri* South Fork Mountain lupine | -- | -- | 1B.2 | G2 | S2 | Jun-Jul(Aug) | Fabaceae perennial herb | Lower montane coniferous forest. 1218 – 2000 m | **Potential**. Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *36* | *Meesia triquetra* Three-ranked hump moss | -- | -- | 4.2 | G5 | S4 | Jul | Meesiaceae moss | Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic); soil. 1300 – 2953 m | **Potential**. Potential habitat exists within the meadow habitat. |
| *37* | *Montia howellii* Howell's montia | -- | -- | 2B.2 | G3 G4 | S2 | (Feb)Mar-May | Montiaceae annual herb | Meadows and seeps, North Coast coniferous forest, Vernal pools; Roadsides (sometimes), Vernally Mesic. 0 – 835 m | **Potential**. Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint as well as vernal pools areas. |
| *38* | *Navarretia leucocephala ssp. bakeri* Baker's navarretia | -- | -- | 1B.1 | G4 T2 | S2 | Apr-Jul | Polemoniaceae annual herb | Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Mesic. 5 – 1740 m | **Potential**. Potential habitat exists within the grasslands, the forested habitat adjacent to the proposed cultivation footprint, as well as vernal pools areas. |

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| *39* | *Piperia candida*<br>White-flowered rein orchid | -- | -- | 1B.2 | G3<br>? | S3 | (Mar-Apr)May-Sep | Orchidaceae<br>perennial herb | Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest; Serpentinite (sometimes). 30 – 1310 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *40* | *Pityopus californicus*<br>California pinefoot | -- | -- | 4.2 | G4<br>G5 | S4 | (Mar-Apr)May-Aug | Ericaceae<br>perennial herb (achlorophyllous) | Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Mesic. 15 – 2225 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *41* | *Platanthera stricta*<br>Slender bog-orchid | -- | -- | 4.2 | G5 | S3 | May-Aug | Orchidaceae<br>perennial herb | Lower montane coniferous forest, Meadows and seeps; Mesic. 1000 – 2300 m | **No Potential**.<br>No potential habitat exists. No habitat above 900 m elevation. |
| *42* | *Ptilidium californicum*<br>Pacific fuzzwort | -- | -- | 4.3 | G4<br>G5 | S3<br>S4 | May-Aug | Ptilidiaceae<br>liverwort | Lower montane coniferous forest, Upper montane coniferous forest; Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders. 1140 – 1800 m | **No Potential**.<br>No habitat above 900 meters. No potential habitat exists. |
| *43* | *Sabulina decumbens*<br>Lassics sandwort | -- | -- | 1B.2 | G1 | S1 | Jul | Caryophyllaceae<br>perennial herb | Lower montane coniferous forest, Upper montane coniferous forest; Serpentinite. 1500 – 1675 m | **No Potential**.<br>No habitat above 900 meters. No potential habitat exists. |
| *44* | *Sanicula tracyi*<br>Tracy's sanicle | -- | -- | 4.2 | G4 | S4 | Apr-Jul | Apiaceae<br>perennial herb | Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest; Openings. 100 – 1585 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *45* | *Scytinium siskiyouense*<br>Siskiyou jellyskin lichen | -- | -- | 1B.1 | G2<br>G3 | S1 | -- | Collemataceae<br>foliose lichen | Lower montane coniferous forest, North Coast coniferous forest; Epiphytic, usually on the bark of Fagaceae, such as *Quercus* or *Chrysolepis*. 635 – 1460 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |

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| *46* | *Sedum flavidum*<br>Pale yellow stonecrop | -- | -- | 4.3 | G3 | S3 | May-Jul | Crassulaceae<br>perennial herb | Broadleaved upland forest, Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Openings, Rocky, Serpentinite, Talus, Volcanic. 355 – 2155 m | **Potential**.<br>Potential habitat exists within rocky areas as well as the forested habitat adjacent to the proposed cultivation footprint. |
| *47* | *Sedum laxum ssp. heckneri*<br>Heckner's stonecrop | -- | -- | 4.3 | G5 T4 Q | S4 | Jun-Jul | Crassulaceae<br>perennial herb | Lower montane coniferous forest, Upper montane coniferous forest; Gabbroic (sometimes), Serpentinite (sometimes). 100 – 2100 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *48* | *Silene bolanderi*<br>Bolander's catchfly | -- | -- | 1B.2 | G2 | S2 | May-Jun | Caryophyllaceae<br>perennial herb | Chaparral (edges), Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest; Usually grassy openings, sometimes dry rocky slopes, canyons, or roadsides; Openings (usually), Roadsides (sometimes), Rocky (sometimes), Serpentinite (sometimes). 420 – 1150 m | **Potential**.<br>Potential habitat exists within the grasslands, rocky slopes, roadsides, as well as the forested habitat adjacent to the proposed cultivation footprint. |
| *49* | *Tracyina rostrata*<br>Beaked tracyina | -- | -- | 1B.2 | G2 | S2 | May-Jun | Asteraceae<br>annual herb | Chaparral, Cismontane woodland, Valley and foothill grassland. 90 – 1270 m | **Potential**.<br>Potential habitat exists within the grasslands. |
| *50* | *Usnea longissima*<br>Methuselah's beard lichen | -- | -- | 4.2 | G4 | S4 | -- | Parmeliaceae<br>fruticose lichen (epiphytic) | Broadleaved upland forest, North Coast coniferous forest; On tree branches; usually on old growth hardwoods and conifers. 50 – 1460 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |
| *51* | *Veratrum insolitum*<br>Siskiyou false-hellebore | -- | -- | 4.3 | G3 | S4 | Jun-Aug | Melanthiaceae<br>perennial herb | Chaparral, Lower montane coniferous forest; Clay. 45 – 1635 m | **Potential**.<br>Potential habitat exists within the forested habitat adjacent to the proposed cultivation footprint. |

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| *52* | *Wyethia longicaulis* Humboldt County wyethia | -- | -- | 4.3 | G4 | S4 | May-Jul | Asteraceae perennial herb | Broadleaved upland forest, Coastal prairie, Lower montane coniferous forest; Roadsides (sometimes). 750 – 1525 m | **Potential**. Potential habitat exists within the grasslands, roadsides, as well as the forested habitat adjacent to the proposed cultivation footprint. |

# Attachment B. Habitat Photos

Photo 1. Tracy's tarweed (*Hemizonia congesta ssp. tracyi*, CRPR 4.3) flowering adjacent to the Steve Early Cannabis Cultivation Project proposed footprint. Photo taken 8 June 2023, by C. Allchin.

Photo 2. The eastern boundary of the proposed cultivation area, looking south, showing the *Hemizonia congesta ssp. tracyi* (CRPR 4.3). Photo taken 8 June 2023, by C. Allchin.

Photo 3. The proposed cultivation area, looking east. Photo taken 24 April 2023, by C. Allchin.

Photo 4. The proposed cultivation area, looking west. Photo taken 24 April 2023, by C. Allchin.

# Attachment C. Plant Species Observed

| Form | Scientific Name | Common Name | Status | Family |
|---|---|---|---|---|
| Trees | *Acer macrophyllum* | Bigleaf maple | native | Sapindaceae |
| | *Arbutus menziesii* | Madrono | native | Ericaceae |
| | *Pseudotsuga menziesii* | Douglas fir | native | Pinaceae |
| | *Quercus garryana* | Oregon oak | native | Fagaceae |
| | *Quercus kelloggii* | California black oak | native | Fagaceae |
| | *Umbellularia californica* | California bay | native | Lauraceae |
| Shrubs | *Arctostaphylos manzanita ssp. manzanita* | Common manzanita | native | Ericaceae |
| | *Baccharis pilularis* | Coyote brush | native | Asteraceae |
| | *Eriogonum nudum* | Naked buckwheat | native | Polygonaceae |
| | *Holodiscus discolor* | Oceanspray | native | Rosaceae |
| | *Lathyrus angulatus* | Angled pea vine | non-native | Fabaceae |
| | *Ribes menziesii var. menziesii* | Canyon gooseberry | native | Grossulariaceae |
| | *Rosa gymnocarpa* | Wood rose | native | Rosaceae |
| | *Symphoricarpos albus* | Common snowberry | native | Caprifoliaceae |
| | *Toxicodendron diversilobum* | Poison oak | native | Anacardiaceae |
| Herbaceous | *Achillea millefolium* | Yarrow | native | Asteraceae |
| | *Acmispon parviflorus* | Hill lotus | native | Fabaceae |
| | *Acmispon wrangelianus* | Chilean trefoil | native | Fabaceae |
| | *Aira caryophyllea* | Silvery hairgrass | non-native | Poaceae |
| | *Anisocarpus madioides* | Woodland madia | native | Asteraceae |
| | *Anthoxanthum odoratum* | Sweet vernal grass | invasive non-native | Poaceae |
| | *Aphanes occidentalis* | Ladie's mantle | native | Rosaceae |
| | *Avena barbata* | Slim oat | invasive non-native | Poaceae |
| | *Briza maxima* | Rattlesnake grass | invasive non-native | Poaceae |
| | *Briza minor* | Little rattlesnake grass | non-native | Poaceae |
| | *Brodiaea elegans* | Harvest brodiaea | native | Themidaceae |
| | *Bromus catharticus* | Rescue grass | non-native | Poaceae |
| | *Bromus diandrus* | Ripgut brome | invasive non-native | Poaceae |

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| Herbaceous | *Bromus hordeaceus* | Soft chess | invasive non-native | Poaceae |
| | *Bromus madritensis ssp. rubens* | Foxtail brome | invasive non-native | Poaceae |
| | *Bromus vulgaris* | Common brome | native | Poaceae |
| | *Calycadenia fremontii* | Fremont's calycadenia | native | Asteraceae |
| | *Calystegia occidentalis ssp. occidentalis* | Modoc morning glory | native | Convolvulaceae |
| | *Capsella bursa-pastoris* | Shepherd's purse | non-native | Brassicaceae |
| | *Carduus pycnocephalus* | Italian thistle | invasive non-native | Asteraceae |
| | *Carex praegracilis* | Field sedge | native | Cyperaceae |
| | *Cerastium glomeratum* | Large mouse ears | non-native | Caryophyllaceae |
| | *Chlorogalum pomeridianum* | Amole | native | Agavaceae |
| | *Cirsium vulgare* | Bullthistle | invasive non-native | Asteraceae |
| | *Clarkia gracilis ssp. gracilis* | Graceful clarkia | native | Onagraceae |
| | *Claytonia perfoliata* | Miner's lettuce | native | Montiaceae |
| | *Claytonia rubra* | Red stemmed spring beauty | native | Montiaceae |
| | *Croton setiger* | Turkey-mullein | native | Euphorbiaceae |
| | *Cynoglossum grande* | Houndstongue | native | Boraginaceae |
| | *Cynosurus echinatus* | Dogtail grass | invasive non-native | Poaceae |
| | *Danthonia californica* | California oatgrass | native | Poaceae |
| | *Danthonia intermedia* | Timber oatgrass | native | Poaceae |
| | *Daucus pusillus* | Wild carrot | native | Apiaceae |
| | *Dendroalsia abietina* | Dendroalsia moss | native | Cryphaeaceae |
| | *Dichelostemma congestum* | Fork toothed ookow | native | Themidaceae |
| | *Elymus caput-medusae* | Medusa head | invasive non-native | Poaceae |
| | *Elymus glaucus* | Blue wildrye | native | Poaceae |
| | *Erodium botrys* | Big heron bill | non-native | Geraniaceae |
| | *Erodium cicutarium* | Coastal heron's bill | invasive non-native | Geraniaceae |
| | *Erythranthe guttata* | Yellow monkey flower | native | Phrymaceae |
| | *Eschscholzia californica* | California poppy | native | Papaveraceae |
| | *Festuca perennis* | Italian rye grass | invasive non-native | Poaceae |
| | *Fragaria vesca* | Wild strawberry | native | Rosaceae |
| | *Galium aparine* | Cleavers | native | Rubiaceae |
| | *Galium californicum* | California bedstraw | native | Rubiaceae |
| | *Geranium dissectum* | Wild geranium | invasive non-native | Geraniaceae |
| | *Hemizonia congesta ssp. tracyi* | Tracy's tarplant | rare, native | Asteraceae |

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|---|---|---|---|
| *Holcus lanatus* | Common velvetgrass | invasive non-native | Poaceae |
| *Hordeum vulgare* | Common barley | non-native | Poaceae |
| *Hypericum perforatum* | Klamathweed | invasive non-native | Ericaceae |
| *Hypochaeris glabra* | Smooth cats ear | invasive non-native | Asteraceae |
| *Hypochaeris radicata* | Hairy cats ear | invasive non-native | Asteraceae |
| *Juncus effusus* | Common bog rush | native | Juncaceae |
| *Juncus occidentalis* | Slender juncus | native | Juncaceae |
| *Juncus patens* | Rush | native | Juncaceae |
| *Kickxia elatine* | Sharp point fluellin | non-native | Plantaginaceae |
| *Limnanthes douglasii* | Common meadow foam | native | Limnanthaceae |
| *Linum bienne* | Flax | non-native | Linaceae |
| *Lupinus bicolor* | Lupine | native | Fabaceae |
| *Luzula comosa* | Hairy wood rush | native | Juncaceae |
| *Lysimachia arvensis* | Scarlet pimpernel | non-native | Myrsinaceae |
| *Madia gracilis* | Gumweed | native | Asteraceae |
| *Matricaria occidentalis* | | | |
| *Mentha pulegium* | Pennyroyal | invasive non-native | Lamiaceae |
| *Micropus californicus* | Q tips | native | Asteraceae |
| *Montia fontana* | Water montia | native | Montiaceae |
| *Myosotis discolor* | Forget me not | non-native | Boraginaceae |
| *Navarretia intertexta* | Interwoven navarretia | native | Polemoniaceae |
| *Nemophila menziesii var. atomaria* | Baby blue eyes | native | Boraginaceae |
| *Osmorhiza berteroi* | Sweet cicely | native | Apiaceae |
| *Plagiobothrys nothofulvus* | Rusty haired popcorn flower | native | Boraginaceae |
| *Plantago lanceolata* | Ribwort | invasive non-native | Plantaginaceae |
| *Plectritis congesta ssp. brachystemon* | Shortspur seablush | native | Valerianaceae |
| *Poa bulbosa* | Bulbous blue grass | non-native | Poaceae |
| *Polygonum aviculare* | Prostrate knotweed | non-native | Polygonaceae |
| *Primula hendersonii* | Mosquito bill | native | Primulaceae |
| *Prunella vulgaris* | Self heal | native | Lamiaceae |
| *Pseudognaphalium luteoalbum* | Jersey cudweed | non-native | Asteraceae |
| *Ranunculus occidentalis var. occidentalis* | Western buttercup | native | Ranunculaceae |
| *Rumex acetosella* | Sheep sorrel | invasive non-native | Polygonaceae |
| *Rumex crispus* | Curly dock | invasive non-native | Polygonaceae |

Herbaceous

| | | | | |
|---|---|---|---|---|
| Herbaceous | *Sanicula bipinnatifida* | Purple sanicle | native | Apiaceae |
| | *Sanicula crassicaulis* | Pacific sanicle | native | Apiaceae |
| | *Scleranthus annuus ssp. annuus* | German knotgrass | non-native | Caryophyllaceae |
| | *Sherardia arvensis* | Field madder | non-native | Rubiaceae |
| | *Silybum marianum* | Milk thistle | invasive non-native | Asteraceae |
| | *Sisyrinchium bellum* | Blue eyed grass | native | Iridaceae |
| | *Sonchus asper* | Spiny sowthistle | non-native | Asteraceae |
| | *Spergularia rubra* | Purple sand spurry | non-native | Caryophyllaceae |
| | *Stachys rigida* | Rough hedgenettle | native | Lamiaceae |
| | *Stellaria media* | Chickweed | non-native | Caryophyllaceae |
| | *Taraxacum officinale* | Red seeded dandelion | non-native | Asteraceae |
| | *Torilis arvensis* | Field hedge parsley | invasive non-native | Apiaceae |
| | *Tragopogon dubius* | Goat's beard | non-native | Asteraceae |
| | *Trichostema lanceolatum* | Vinegarweed | native | Lamiaceae |
| | *Trifolium dubium* | Shamrock | non-native | Fabaceae |
| | *Trifolium hirtum* | Rose clover | invasive non-native | Fabaceae |
| | *Trifolium oliganthum* | Few flowered clover | native | Fabaceae |
| | *Trifolium repens* | White clover | non-native | Fabaceae |
| | *Trifolium subterraneum* | Subterranean clover | non-native | Fabaceae |
| | *Trifolium willdenovii* | Tomcat clover | native | Fabaceae |
| | *Triphysaria pusilla* | Little owl's clover | native | Orobanchaceae |
| | *Vicia americana* | American vetch | native | Fabaceae |
| | *Vicia sativa* | Spring vetch | non-native | Fabaceae |
| | *Viola glabella* | Stream violet | native | Violaceae |
| | *Viola purpurea ssp. integrifolia* | Smooth leaved violet | native | Violaceae |
| | *Wyethia angustifolia* | Narrow leaved mule ears | native | Asteraceae |
| | *Zeltnera muehlenbergii* | Muehlenberg's centaury | native | Gentianaceae |

# Attachment D: Rank Definitions

**CONSERVATION STATUS DEFINITIONS**

**Fed List***
This field indicates the plant's legal status under the Federal Endangered Species Act (ESA).

**FE** **Federally Endangered**: The classification provided to a plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
**FT** **Federally Threatened**: The classification provided to a plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
**PE** **Proposed Endangered**: The classification provided to a plant that is proposed for federal listing as Endangered in the Federal Register under Section 4 of the Endangered Species Act.
**PT** **Proposed Threatened**: The classification provided to a plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.
**FC** **Federal Candidate**: The classification provided to a plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the list of Federally Endangered and Threatened species.
**None** The plant has no federal listing status under ESA.
**FD** **Federally Delisted**: The plant was previously listed as Endangered or Threatened but is no longer on the list of Federally Endangered and Threatened species.

**State List***
This field indicates the plant's legal status under the California Endangered Species Act (CESA).

**CE** **State Listed as Endangered**: The classification provided to a native species or subspecies in serious danger of becoming extinct throughout all or a significant portion of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
**CT** **State Listed as Threatened**: The classification provided to a native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
**CR** **State Listed as Rare**: The classification provided to a native plant species, subspecies, or variety when, although not presently threatened with extinction, it occurs in such small numbers throughout its range that it may become endangered if its present environment worsens. This designation stems from the Native Plant Protection Act of 1977.
**CC** **Candidate for State Listing**: The classification provided to a native species or subspecies that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered or threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered or threatened species.
**None** The plant has no state listing status under CESA.
**CD** **State Delisted**: The plant was previously listed as Endangered, Threatened or Rare but is no longer listed by the State of California.

**Global Rank***
The Global Rank (G-rank) is an indication of the overall condition and imperilment of an element throughout its global range. It is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on the rarity factors. The Global Ranks are assigned by NatureServe in coordination with the state program(s) where the element occurs.

**GX** **Presumed Extinct** — Not located despite intensive searches and virtually no likelihood of rediscovery.
**GH** **Possibly Extinct** — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty. Examples of such evidence include 1) that a species has not been documented in approximately 20–40 years despite some searching or some evidence of significant habitat loss or degradation; 2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.

**G1** **Critically Imperiled** — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

**G2** **Imperiled** — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

**G3** **Vulnerable** — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

**G4** **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**G5** **Secure** — Common; widespread and abundant.

**GNR** **Unranked** — Global rank not yet assessed.

**GU** **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.

**G#G#** **Range Rank** — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.

**G#T#** **Infraspecific Taxon** — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank. Rules for assigning T-ranks follow the same principles as those for Global Ranks. However, a T-rank cannot imply the subspecies or variety is more abundant than the species. In such cases, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.

**?** **Qualifier: Inexact Numeric Rank** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

**Q** **Qualifier: Questionable Taxonomy** — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.

**C** **Qualifier: Captive or Cultivated Only** — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

**State Rank***

The State Rank (S-rank) is an indication of the condition and imperilment of an element throughout its range within the state. As with the G-rank, it is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on rarity. The State Ranks are assigned by the CNDDB biologists using standard natural heritage methodology.

**SX** **Presumed Extirpated** — Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

**SH** **Possibly Extirpated (Historical)** — Species occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.

**S1** **Critically Imperiled** — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

**S2** **Imperiled** — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.

**S3** **Vulnerable** — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

**S4** **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**S5** **Secure** — Common, widespread, and abundant in the state.

**SNR** **Unranked** — State conservation status not yet assessed.

**SU** **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.

**S#S#** **Range Rank** — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

**?** **Qualifier: Inexact or Uncertain** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

**Note**: References to older ranks may contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

**CA Rare Plant Rank (CRPR)**
California Rare Plant Ranks (CRPRs) are a ranking system developed by the California Native Plant Society (CNPS) to define and categorize rarity in the California flora. All plants that are assigned to a California Rare Plant Rank category are tracked by the CNDDB; however, element occurrence (EO) information is only maintained for CRPR 1 and 2 plants, and some CRPR 3 plants. Most CRPR 3 and 4 plants that have EO information in this Inventory and the CNDDB were previously assigned to CRPR 1 or 2; their EO data reflect their prior rank and have generally not been updated since the date of their change to CRPR 3 or 4.

Major changes to California Rare Plant Ranks (e.g., additions, changes, and deletions) undergo the CNPS Rare Plant Status Review process. This is a joint effort by CNPS, the CNDDB, Regional Plant Status Review Groups, the Status Review Forum, and botanical experts throughout the world. Once consensus is reached, then additions, changes, or deletions in California Rare Plant Ranks are made to this Inventory and the CNDDB. For a flow chart of the status review process, see Rare Plant Data in California: The Cooperative Relationship between the California Natural Diversity Database and the California Native Plant Society.

**1A** **Presumed Extirpated or Extinct** — Plants presumed extirpated in California and either rare or extinct elsewhere. These plants have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

All of the plants constituting California Rare Plant Rank 1A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Should these taxa be rediscovered, any impacts to individual plants or their habitat must be analyzed during preparation of environmental documents relating to the California Environmental Quality Act (CEQA), or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

**1B** **Rare or Endangered — Plants rare, threatened, or endangered in California and elsewhere.** These plants are rare throughout their entire range with the majority also being endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of taxa in the CNPS Inventory, with more than 1,000 plants assigned to this category of rarity.

All of the plants constituting California Rare Plant Rank 1B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

**2A** **Extirpated in California — Plants presumed extirpated in California but common elsewhere**. These plants are presumed extirpated because they have not been observed or documented in California for many years. This list only includes plants that are presumed extirpated in California but are common elsewhere in their range outside of the state.

All of the plants constituting California Rare Plant Rank 2A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Should these species be rediscovered, any impacts proposed to individuals, or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

**2B** **Rare or Endangered in California — Plants rare, threatened, or endangered in California but common elsewhere.** Except for being common beyond the boundaries of California, 2B plants would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act. With California Rare Plant Rank 2B, we recognize the importance of protecting the geographic range of widespread species. In this way we protect the diversity of our own state's flora and help maintain evolutionary processes and genetic diversity within species.

All of the plants constituting California Rare Plant Rank 2B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered

to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

**3** **Needs Review — Plants about which more information is needed.** These plants are united by one common theme—we lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic, yet if taxonomically valid would demonstrably qualify for rank 1B or 2B. For each California Rare Plant Rank 3 plant we have provided the known information and indicated in the "Notes" section of the Inventory record where assistance is needed. Data regarding distribution, endangerment, ecology, and taxonomic validity are welcomed and can be submitted by emailing the Rare Plant Program at rareplants@cnps.org.

Many of the plants constituting California Rare Plant Rank 3 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat should be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

**4** **Uncommon in California — Plants of limited distribution, a watch list**. These plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, we will transfer it to a more appropriate rank.
Some of the plants constituting California Rare Plant Rank 4 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for significant impacts during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines §15125 (c) and/or §15380. This may be particularly appropriate for:

The type locality of a California Rare Plant Rank 4 taxon;
Occurrences at the periphery of a species' range;
Areas where the taxon is especially uncommon;
Areas where the taxon has sustained heavy losses (declining);
Occurrences exhibiting unusual morphology or occurring on unusual substrates;
Species maintained on BLM, USFWS, or USFS sensitive species lists; and
Taxa associated with a habitat that is declining in California at a significant rate.
To assist in evaluating CRPR 4 taxa for CEQA consideration, see the technical memorandum on Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis prepared by the Rare Plant Program Committee.

**Threat Rank**
California Rare Plant Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are assigned as follows:

**0.1** **Seriously threatened in California** — Over 80% of occurrences threatened / high degree and immediacy of threat.
**0.2** **Moderately threatened in California** — 20-80% of occurrences threatened / moderate degree and immediacy of threat.
**0.3** **Not very threatened in California** — Less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known.

**Notes:**

Threat ranks do not are provided for general research purposes only and do not indicate differences in conservation assessment. For example, a CRPR 1B.3 plant has the same conservation status as a CRPR 1B.1 plant, and it is mandatory that both be fully considered during preparation of environmental documents relating to CEQA.

The threat ranking criteria described above represent only the starting point for the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in assigning threat ranks.

In many cases, the threat rank has not been reassessed since the date the taxon was first added to this Inventory or underwent its last Status Review. For these taxa, the assigned threat ranking may not accurately reflect the current level of threat.

**Considered but Rejected**

A category of Considered but Rejected (CBR) exists for plants that either previously had a CRPR, or that were considered for addition to this Inventory but were rejected for one or more reasons. Any plant that is deleted from a CRPR category in this Inventory is not fully removed and is instead changed to the CBR category. Rejected plants are searchable by selecting the "Considered But Rejected" button in the California Rare Plant Rank section of simple and advanced search. A brief description of the reason why the plant was rejected is included for each CBR entry.

# Attachment E. General Location Map, CALVEG Map, & Botanical Survey Map

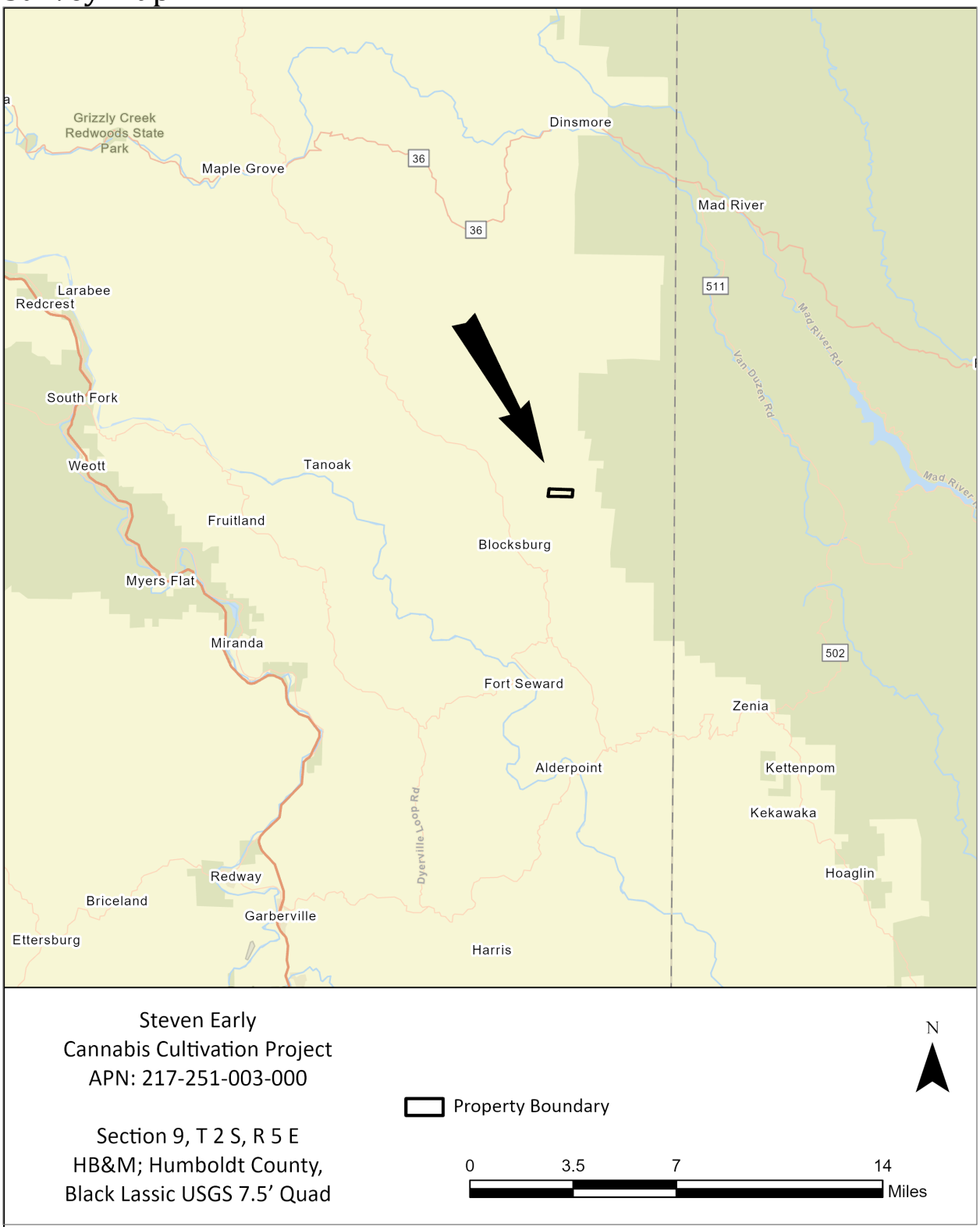



Figure 1. General location map for Steven Early Cannabis Cultivation Project.

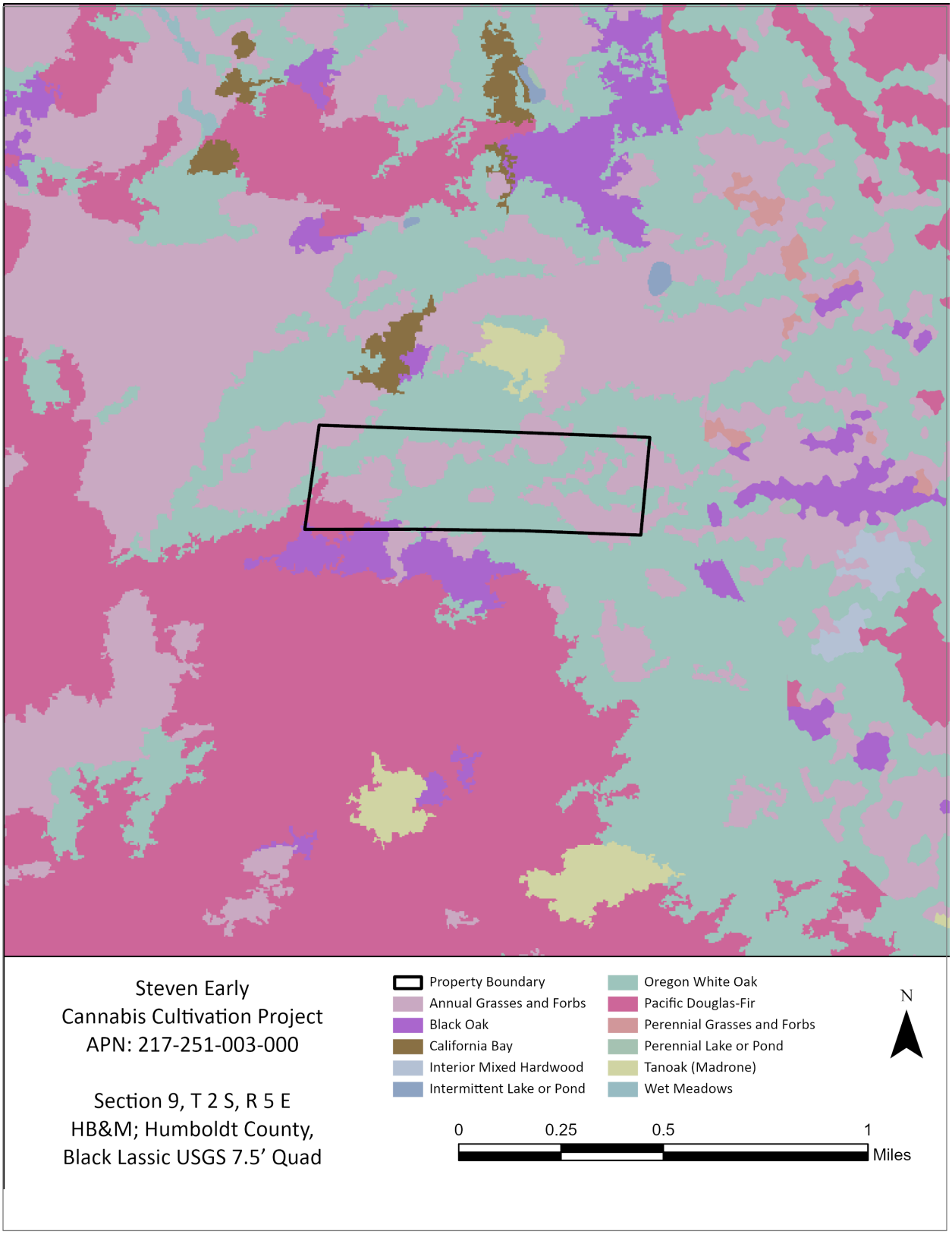



Figure 2. General location map for Steven Early Cannabis Cultivation Project.

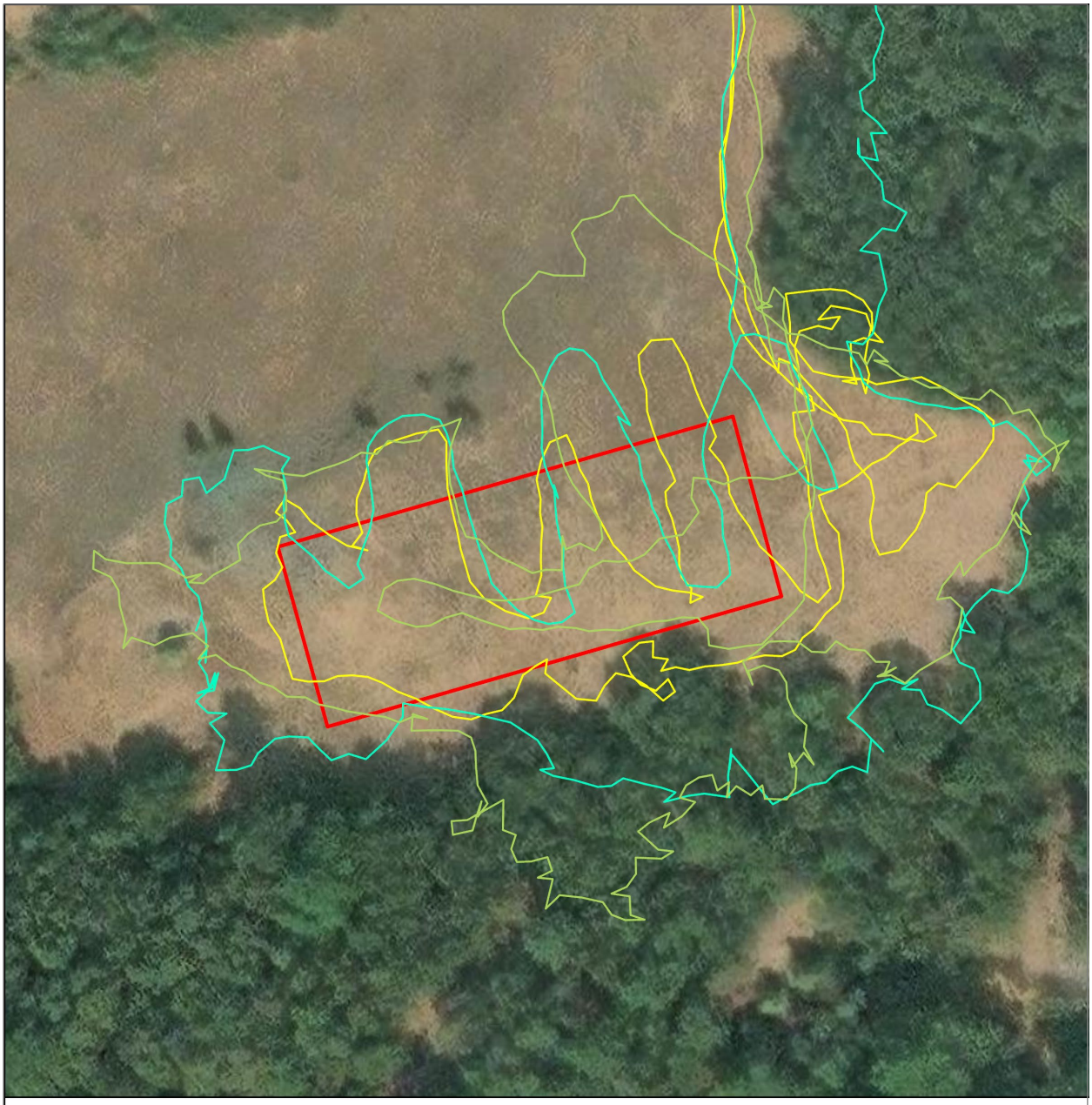



Figure 3. Map of the Steven Early Cannabis Cultivation Project with botanical survey routes taken.

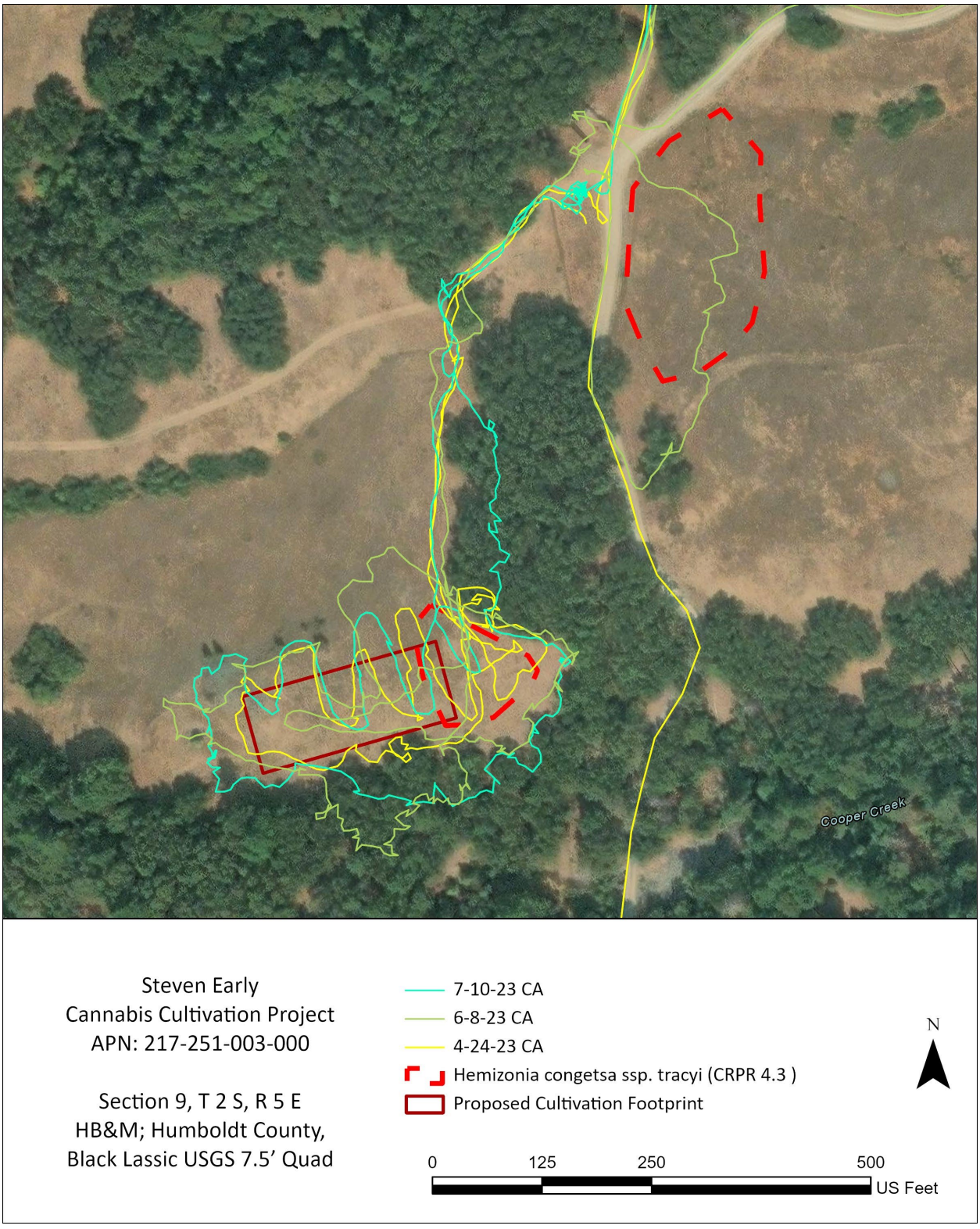
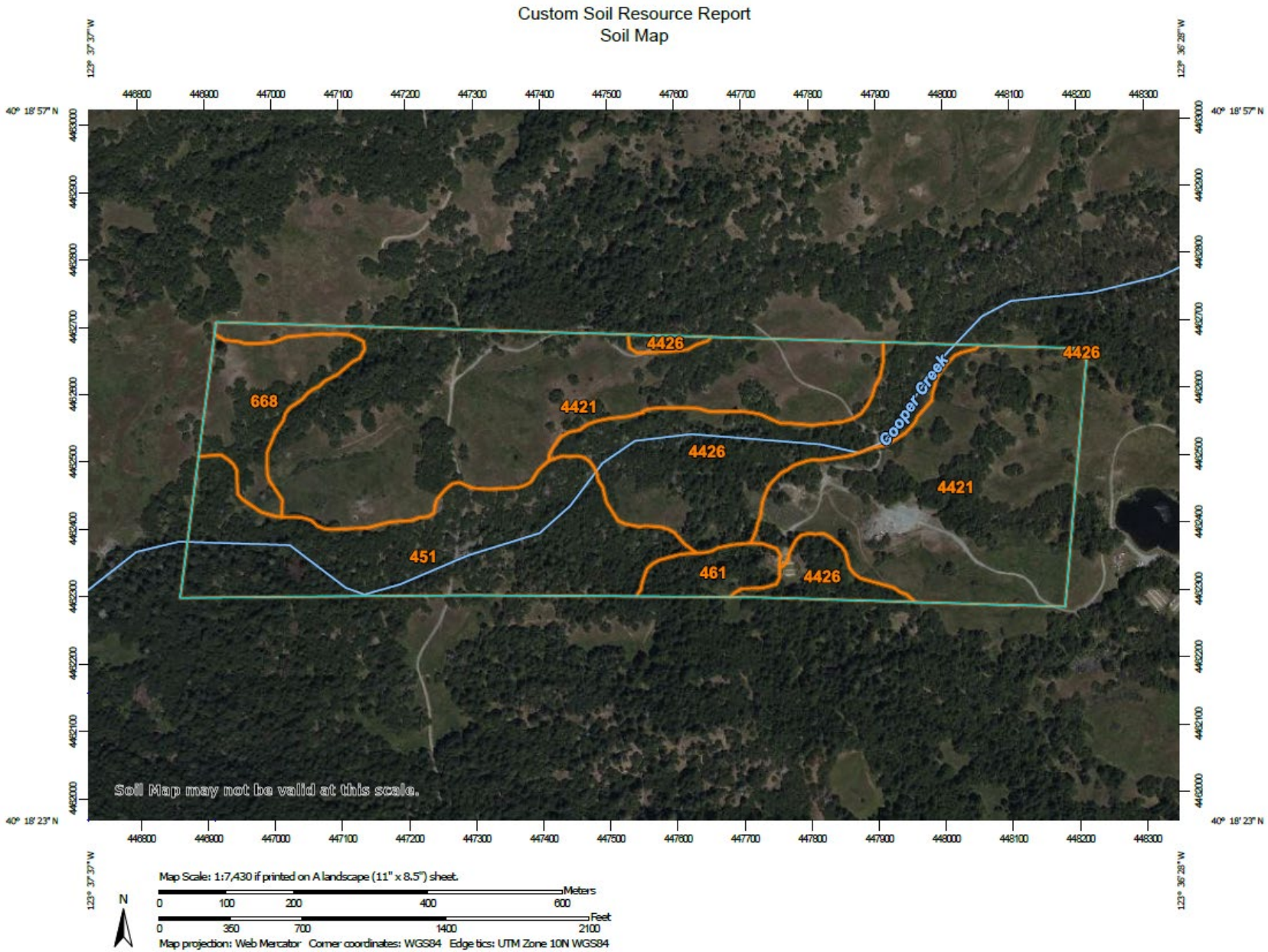



Figure 4. Map of the Steven Early Cannabis Cultivation Project with botanical survey routes taken and locations of the limited distribution *Hemizonia congesta ssp. tracyi*, CRPR 4.3.

# Attachment F: Soil Map of the Property



## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 451 | Burgsblock-Coolyork-Tannin complex, 15 to 30 percent slopes | 25.3 | 19.9% |
| 461 | Tannin-Burgsblock-Rockyglen complex, 30 to 50 percent slopes | 3.2 | 2.5% |
| 668 | Dryfield-Yorknorth-Witherell complex, 30 to 50 percent slopes | 7.9 | 6.2% |
| 4421 | Highyork-Elkcamp-Airstrip complex, 9 to 30 percent slopes | 69.9 | 54.9% |
| 4426 | Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry | 20.9 | 16.5% |
| **Totals for Area of Interest** | | **127.1** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series. Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

**451—Burgsblock-Coolyork-Tannin complex, 15 to 30 percent slopes**
**Map Unit Setting**
*National map unit symbol:* hs7j
*Elevation:* 200 to 4,000 feet
*Mean annual precipitation:* 49 to 90 inches
*Mean annual air temperature:* 52 to 59 degrees F
*Frost-free period:* 240 to 280 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Burgsblock and similar soils:*35 percent
*Coolyork and similar soils:*30 percent
*Tannin and similar soils:*20 percent
*Minor components:*15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Burgsblock**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Parent material:*Colluvium derived from sedimentary rock and/or residuum weathered from sedimentary rock

**Typical profile**
*Oi - 0 to 2 inches:* slightly decomposed plant material
*A1 - 2 to 11 inches:* gravelly loam
*A2 - 11 to 16 inches:* gravelly loam
*Bt1 - 16 to 41 inches:* very gravelly loam
*Bt2 - 41 to 51 inches:* very gravelly loam
*Bt3 - 51 to 71 inches:* very gravelly loam

**Properties and qualities**
*Slope:*15 to 30 percent
*Surface area covered with cobbles, stones or boulders:*0.0 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 6.6 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* B
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Description of Coolyork**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Parent material:*Colluvium derived from mudstone and/or colluvium derived from sandstone and/or residuum weathered from schist

**Typical profile**
*A - 0 to 4 inches:* loam
*BAt - 4 to 14 inches:* clay loam
*Bt1 - 14 to 23 inches:* clay loam
*Bt2 - 23 to 43 inches:* clay loam
*C1 - 43 to 55 inches:* gravelly loam
*C2 - 55 to 71 inches:* gravelly silt loam

**Properties and qualities**
*Slope:*15 to 30 percent
*Surface area covered with cobbles, stones or boulders:*0.0 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:*About 20 to 39 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Calcium carbonate, maximum content:*1 percent
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* D
*Ecological site:* F005XZ020CA - Very Deep Mesic Mountains 40-60"ppt
*Hydric soil rating:* No

**Description of Tannin**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Parent material:*Colluvium derived from mudstone and/or colluvium derived from sandstone

**Typical profile**
*Oi - 0 to 1 inches:* slightly decomposed plant material
*A - 1 to 3 inches:* loam
*Bt1 - 3 to 14 inches:* loam
*Bt2 - 14 to 26 inches:* loam
*Bt3 - 26 to 49 inches:* loam
*Bt4 - 49 to 62 inches:* sandy clay loam
*BCt - 62 to 79 inches:* sandy clay loam

**Properties and qualities**
*Slope:*15 to 30 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 10.8 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* B
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Minor Components**
**Rockyglen**
*Percent of map unit:*5 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope, shoulder
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Hydric soil rating:* No

**Wohly**
*Percent of map unit:*4 percent
*Landform:*Ridges, mountain slopes
*Landform position (two-dimensional):*Summit, shoulder
*Landform position (three-dimensional):*Mountaintop
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Hydric soil rating:* No

**Chalkmountain**
*Percent of map unit:*3 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Hydric soil rating:* No

**Yorknorth**
*Percent of map unit:*2 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, linear
*Across-slope shape:*Concave, linear
*Hydric soil rating:* No

**Rock outcrop**
*Percent of map unit:*1 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Hydric soil rating:* No

**461—Tannin-Burgsblock-Rockyglen complex, 30 to 50 percent slopes**
**Map Unit Setting**
*National map unit symbol:* xhvy
*Elevation:* 200 to 4,000 feet
*Mean annual precipitation:* 49 to 90 inches
*Mean annual air temperature:* 52 to 55 degrees F
*Frost-free period:* 240 to 280 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Tannin and similar soils:*40 percent
*Burgsblock and similar soils:*25 percent
*Rockyglen and similar soils:*20 percent
*Minor components:*15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Tannin**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, shoulder, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Parent material:*Colluvium derived from mudstone and/or colluvium derived from sandstone

**Typical profile**
*Oi - 0 to 1 inches:* slightly decomposed plant material
*A - 1 to 7 inches:* loam
*AB - 7 to 24 inches:* loam
*Bt1 - 24 to 43 inches:* gravelly loam
*Bt2 - 43 to 59 inches:* gravelly clay loam
*Bt3 - 59 to 79 inches:* gravelly clay loam

**Properties and qualities**
*Slope:*30 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.3 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* B
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Description of Burgsblock**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, shoulder, footslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex, linear
*Across-slope shape:*Linear, convex
*Parent material:*Colluvium derived from sandstone and/or colluvium derived from mudstone and/or residuum weathered from sandstone and/or residuum weathered from mudstone

**Typical profile**
*Oi - 0 to 1 inches:* gravelly slightly decomposed plant material
*A - 1 to 8 inches:* very gravelly silt loam
*AB - 8 to 22 inches:* very gravelly silt loam
*Bt1 - 22 to 47 inches:* very gravelly clay loam
*Bt2 - 47 to 67 inches:* very gravelly clay loam
*Bt3 - 67 to 79 inches:* very gravelly clay loam

**Properties and qualities**
*Slope:*30 to 50 percent
*Surface area covered with cobbles, stones or boulders:*0.0 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 6.3 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Description of Rockyglen**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope, shoulder
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Parent material:*Colluvium derived from mudstone and/or residuum weathered from sandstone

**Typical profile**
*Oi - 0 to 2 inches:* very gravelly slightly decomposed plant material
*A1 - 2 to 6 inches:* gravelly loam
*A2 - 6 to 12 inches:* very gravelly loam
*Bw1 - 12 to 26 inches:* extremely gravelly loam
*Bw2 - 26 to 45 inches:* extremely gravelly loam
*C - 45 to 79 inches:* extremely gravelly loam

**Properties and qualities**
*Slope:*30 to 50 percent
*Surface area covered with cobbles, stones or boulders:*5.0 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 4.7 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* B
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Minor Components**
**Coolyork**
*Percent of map unit:*5 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Hydric soil rating:* No

**Wohly**
*Percent of map unit:*5 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex, linear
*Across-slope shape:*Linear, convex
*Hydric soil rating:* No

**Chalkmountain**
*Percent of map unit:*4 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Linear, concave, convex
*Hydric soil rating:* No

**Rock outcrop**
*Percent of map unit:*1 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Hydric soil rating:* No

**668—Dryfield-Yorknorth-Witherell complex, 30 to 50 percent slopes**
**Map Unit Setting**
*National map unit symbol:* 2lgsj
*Elevation:* 200 to 2,490 feet
*Mean annual precipitation:* 49 to 90 inches
*Mean annual air temperature:* 52 to 59 degrees F
*Frost-free period:* 240 to 280 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Dryfield and similar soils:*40 percent
*Yorknorth and similar soils:*30 percent
*Witherell and similar soils:*15 percent
*Minor components:*15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Dryfield**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Shoulder, backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Parent material:*Colluvium derived from sandstone and/or residuum weathered from sandstone

**Typical profile**
*A - 0 to 9 inches:* loam
*Bt1 - 9 to 19 inches:* loam
*Bt2 - 19 to 35 inches:* loam
*Bt3 - 35 to 49 inches:* loam
*BCt - 49 to 59 inches:* very paragravelly loam
*C - 59 to 71 inches:* very paragravelly loam

**Properties and qualities**
*Slope:*30 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.9 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* B
*Ecological site:* F005XZ013CA - Thermic Mountains
*Hydric soil rating:* No

**Description of Yorknorth**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, linear
*Across-slope shape:*Concave, linear
*Parent material:*Colluvium derived from sandstone and/or earthflow deposits derived from schist

**Typical profile**
*A1 - 0 to 12 inches:* silt loam
*A2 - 12 to 22 inches:* silt loam
*Bt1 - 22 to 33 inches:* clay loam
*Bt2 - 33 to 39 inches:* clay
*C1 - 39 to 46 inches:* clay loam
*C2 - 46 to 49 inches:* clay
*C3 - 49 to 56 inches:* gravelly clay
*C4 - 56 to 79 inches:* clay

**Properties and qualities**
*Slope:*30 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:*About 20 to 39 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Calcium carbonate, maximum content:*2 percent
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 10.2 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* R005XZ005CA - Thermic Hills
*Hydric soil rating:* No

**Description of Witherell**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Shoulder
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Parent material:*Residuum weathered from sandstone

**Typical profile**
*A - 0 to 3 inches:* loam
*Bw - 3 to 7 inches:* gravelly loam
*Bt - 7 to 13 inches:* gravelly loam
*C - 13 to 79 inches:* gravel

**Properties and qualities**
*Slope:*30 to 50 percent
*Depth to restrictive feature:*10 to 14 inches to strongly contrasting textural stratification
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately low to moderately high (0.14 to 1.42 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Very low (about 2.0 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* B
*Ecological site:* R005XZ005CA - Thermic Hills
*Hydric soil rating:* No

**Minor Components**
**Coolyork**
*Percent of map unit:*8 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Concave, linear
*Across-slope shape:*Concave, linear
*Hydric soil rating:* No

**Tannin**
*Percent of map unit:*4 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, shoulder, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Hydric soil rating:* No

**Burgsblock**
*Percent of map unit:*2 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, shoulder, footslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex, linear
*Across-slope shape:*Linear, convex
*Hydric soil rating:* No

**Rock outcrop**
*Percent of map unit:*1 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Center third of mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Hydric soil rating:* No

**4421—Highyork-Elkcamp-Airstrip complex, 9 to 30 percent slopes**
**Map Unit Setting**
*National map unit symbol:* 2p9vk
*Elevation:* 1,970 to 4,000 feet
*Mean annual precipitation:* 60 to 90 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 200 to 260 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Highyork and similar soils:*50 percent
*Elkcamp, dry, and similar soils:*25 percent
*Airstrip, dry, and similar soils:*15 percent
*Minor components:*10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Highyork**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, convex, linear
*Across-slope shape:*Concave, linear
*Parent material:*Colluvium derived from sandstone and/or earthflow deposits derived from schist

**Typical profile**
*A1 - 0 to 8 inches:* silt loam
*A2 - 8 to 16 inches:* silt loam
*Bt1 - 16 to 26 inches:* clay
*Bt2 - 26 to 37 inches:* clay
*Btg1 - 37 to 43 inches:* clay
*Btg2 - 43 to 71 inches:* gravelly clay loam

**Properties and qualities**
*Slope:*9 to 30 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Somewhat poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:*About 10 to 20 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Calcium carbonate, maximum content:*2 percent
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C/D
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Description of Elkcamp, Dry**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, linear
*Across-slope shape:*Concave, linear
*Parent material:*Colluvium derived from mudstone and/or colluvium derived from sandstone

**Typical profile**
*A - 0 to 7 inches:* loam
*ABt - 7 to 16 inches:* gravelly loam
*Bt1 - 16 to 30 inches:* gravelly clay loam
*Bt2 - 30 to 41 inches:* gravelly clay loam
*Bt3 - 41 to 51 inches:* gravelly clay loam
*BCt - 51 to 71 inches:* gravelly clay loam

**Properties and qualities**
*Slope:*9 to 30 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:*About 39 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Description of Airstrip, Dry**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope, footslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Concave, linear
*Across-slope shape:*Concave, linear
*Parent material:*Residuum weathered from sandstone

**Typical profile**
*A1 - 0 to 6 inches:* loam
*A2 - 6 to 12 inches:* loam
*A3 - 12 to 22 inches:* extremely cobbly loam
*R - 22 to 79 inches:* bedrock

**Properties and qualities**
*Slope:*9 to 30 percent
*Depth to restrictive feature:*20 to 39 inches to lithic bedrock
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 3.0 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F005XZ022CA - Mesic Mountains >60"ppt
*Hydric soil rating:* No

**Minor Components**
**Coyoterock, dry**
*Percent of map unit:*5 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Ecological site:*F004BX114CA - Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:*Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**Maneze, dry**
*Percent of map unit:*5 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Ecological site:*F004BX114CA - Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:*Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**4426—Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry**
**Map Unit Setting**
*National map unit symbol:* 2pt36
*Elevation:* 520 to 3,160 feet
*Mean annual precipitation:* 56 to 80 inches
*Mean annual air temperature:* 50 to 59 degrees F
*Frost-free period:* 200 to 260 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Pasturerock, dry, and similar soils:*40 percent
*Coyoterock, dry, and similar soils:*25 percent
*Maneze, dry, and similar soils:*15 percent
*Minor components:*20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Pasturerock, Dry**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Shoulder
*Landform position (three-dimensional):*Upper third of mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Parent material:*Colluvium derived from sandstone and mudstone

**Typical profile**
*A - 0 to 10 inches:* gravelly loam
*A2 - 10 to 24 inches:* loam
*Bt1 - 24 to 35 inches:* clay loam
*Bt2 - 35 to 47 inches:* gravelly clay loam
*Bt3 - 47 to 71 inches:* gravelly clay loam

**Properties and qualities**
*Slope:*15 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:*More than 80 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.8 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F004BX114CA - Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:* Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**Description of Coyoterock, Dry**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Linear
*Across-slope shape:*Linear
*Parent material:*Colluvium derived from sandstone and mudstone

**Typical profile**
*A - 0 to 14 inches:* loam
*ABt - 14 to 24 inches:* loam
*Bt1 - 24 to 31 inches:* clay
*Bt2 - 31 to 37 inches:* clay
*Cg - 37 to 71 inches:* clay

**Properties and qualities**
*Slope:*15 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Low to moderately low (0.01 to 0.06 in/hr)
*Depth to water table:*About 28 to 39 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.8 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* D
*Ecological site:* F004BX114CA - Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:* Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**Description of Maneze, Dry**
**Setting**
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Parent material:*Colluvium derived from sandstone and mudstone

**Typical profile**
*Oi - 0 to 1 inches:* slightly decomposed plant material
*A - 1 to 11 inches:* very cobbly loam
*AB - 11 to 24 inches:* very cobbly loam
*Bw1 - 24 to 37 inches:* extremely gravelly clay loam
*Bw2 - 37 to 55 inches:* very gravelly clay loam
*Bw3 - 55 to 79 inches:* very gravelly clay loam

**Properties and qualities**
*Slope:*15 to 50 percent
*Depth to restrictive feature:*More than 80 inches
*Drainage class:*Well drained
*Capacity of the most limiting layer to transmit water (Ksat):*Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:*About 39 to 63 inches
*Frequency of flooding:*None
*Frequency of ponding:*None
*Maximum salinity:*Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 4.9 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F004BX114CA - Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:* Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**Minor Components**

**Rock outcrop**

*Percent of map unit:*10 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Other vegetative classification:*Oak Woodland (RNPOW001CA)
*Hydric soil rating:* No

**Airstrip, dry**

*Percent of map unit:*10 percent
*Landform:*Mountain slopes
*Landform position (two-dimensional):*Backslope
*Landform position (three-dimensional):*Mountainflank
*Down-slope shape:*Convex
*Across-slope shape:*Convex
*Ecological site:*R004BX101CA - Upper prairie, mountain slopes, sandstone and mudstone, clay loam
*Other vegetative classification:*Prairie (RNPP001CA)
*Hydric soil rating:* No

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